

BÜHLMANN fCAL® turbo

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Safe stool extract application on clinical chemistry platforms with BÜHLMANN fCAL® turbo and CALEX® by centrifugation

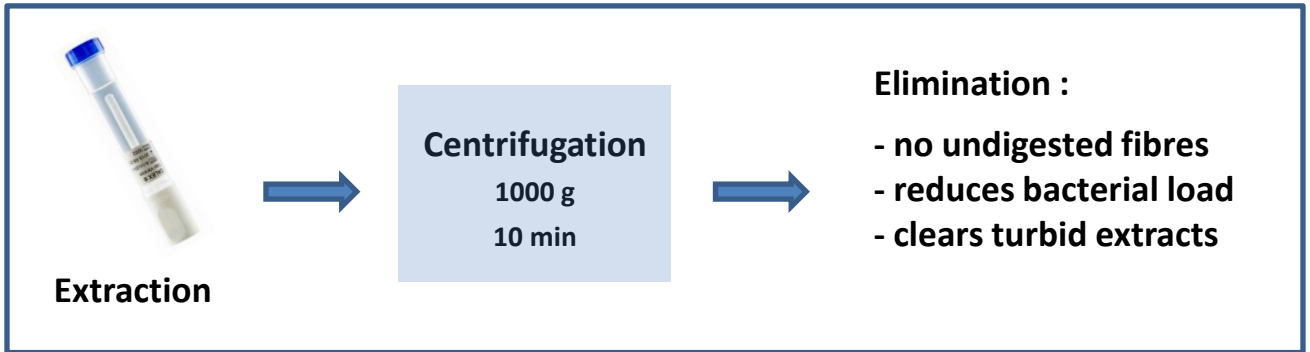


Besides Fecal Immunochemical Tests (FIT) for colon cancer screening BÜHLMANN is the first provider bringing extracts of stool samples on clinical chemistry platforms. BÜHLMANN investigated this new sample matrix with the goal to exclude potential risks.

General concerns and risks

- Clogging of analyzer probes by undigested diet fibres
- Bacterial contamination of system and samples
- Turbid extracts potentially interfere with turbidity measurement
- Bacterial sample carry over
- Assay interferences to other parameters

Safe use of stool extracts by centrifugation



Bacterial load down to urine sample levels

Fresh fecal sample were extracted in CALEX, diluted (1:400) and plated on TSS agar plates (rich medium), incubated and colony forming units per ml (CFU) counted.

	recovery abs	% recovery
fresh extract	100'000-2.5 Mio CFU	100%
centrifuged (10 min; 3000g)	2'000-50'000 CFU	1-5%
centrifuged (10 min; 1000g)		~3%
centrifuged (10 min; 500g)		95%
urine sample	100-10'000 CFU	
urine sample stored 24 h	up to 100'000 CFU	
urine sample UTI	>>100'000 - Mio CFU	

Neglectable bacterial sample carry over

Fresh fecal samples were extracted in CALEX, centrifuged and tested in fCAL turbo on Mindray BS-380. The following sample (Serum or TSB medium) were plated on TSS agar plates. Plates were incubated and CFU counted.

input up to	360'000 CFU
Carry over to serum (2x)	0 CFU
Carry over to TSB medium (2x)	3 CFU

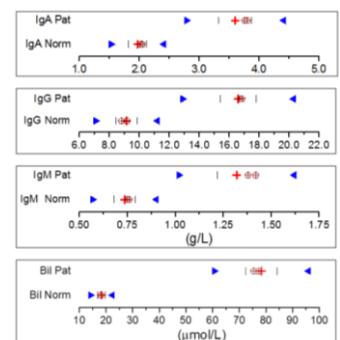
No Interference to other parameters observed

After running >3000 stool extracts on a Mindray BS-380, commercial controls of serum parameters were tested. Calibrations pathological and normal control samples were run.

No special maintenance has been applied on the analyzer.

Parameters tested:

IgA	Total Protein
IgM	Calcium
IgG	Albumin
Bilirubin	Triglycerid (lipid)



- All controls has been measured within the expected 1SD control range
- **No decline of analyzer performance was observed**